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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/981,744	10/19/2001	Dong Wan Ryoo	P67235US0	6169

7590 03/09/2004

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Washington, DC 20004

EXAMINER

TORRES, JOSEPH D

ART UNIT	PAPER NUMBER
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2133

DATE MAILED: 03/09/2004

4

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/981,744

**Applicant(s)**

RYOO ET AL.

**Examiner**

Joseph D. Torres

**Art Unit**

2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 October 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement filed 19 October 2001 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because It does not contain sufficient information for the Examiner to determine relevance (the Examiner suggests that a translation of the Abstract of each of the Korean patents would be adequate and would like to point out that Abstracts of foreign patents are generally readily available). It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 ¶ C(1).

### ***Drawings***

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 'S43' in Figure 3. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to

the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet **within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length** since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because the abstract exceeds 150 words in length. Correction is required. See MPEP § 608.01(b).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nurmohamed; Amin Mulji et al. (US 3725818 A, hereafter referred to as Nurmohamed).

35 U.S.C. 103(a) rejection of claim 1.

Nurmohamed teaches a means for judging signals respectively received in the number of channels (col. 2, lines 50-60 in Nurmohamed teach that the monitoring circuit 16 in Figure 1 of Nurmohamed is a means for judging signals respectively received in a number of channels 10, 11 and 12); means for comparing the signals respectively received in the number of channels to output signals respectively informing if the channels are failed or not (col. 2, lines 50-60 in Nurmohamed teach that three comparators in the monitoring circuit 16 in Figure 1 of Nurmohamed is a means for comparing the signals 1, 2 and 3 respectively received in a number of channels 10, 11 and 12 to output signals 1, 2 and 3 outputted from Amplifiers 13, 14 and 15 respectively informing if the channels are failed or not; Note: col. 3, lines 20-33 in Nurmohamed teach that error signals indicating a channel failure are output on line 17 of Figure 1); and means for respectively transmitting normal signals to the failed channels, which are

Art Unit: 2133

respectively inputted by said comparing means, to maintain the operation of the system (the Abstract in Nurmohamed teaches that if channel 1 or channel 3 fails the output for that channel is switched to channel 2 or channel 1 respectively to maintain the operation of the system).

However Nurmohamed does not explicitly teach the specific use of the channels being connect to a system board.

The Examiner asserts that Nurmohamed teaches a voter circuit for channel redundant systems and that a board is generally a system with various channels. The Applicant admits on page 3 lines 5-15 of the Applicant's specification that use voter machines on redundant channel boards is Prior Art. Hence it would be an obvious Engineering Design Choice to use the voter circuit for a channel redundant system taught in the Nurmohamed patent in a board system since one of ordinary skill in the art at the time the invention was made would have recognized that a board system is still a system and using a voter circuit for a channel redundant board system would have been an obvious embodiment of the teachings in the Nurmohamed patent.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Nurmohamed by using the voter circuit for channel redundant systems taught in the Nurmohamed patent in a channel redundant board system. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that using the voter circuit for channel redundant systems taught in the Nurmohamed patent in a channel redundant board system would have

provided the opportunity to implement an obvious embodiment of the teachings in the Nurmohamed patent based on obvious Engineering Design Choices.

35 U.S.C. 103(a) rejection of claim 2.

Nurmohamed substantially teaches the claimed invention described in claim 1 (as rejected above).

However Nurmohamed does not explicitly teach the specific use of a chip to house the voter circuit for channel redundant systems taught in the Nurmohamed patent.

The Examiner asserts that use of the voter circuit for channel redundant systems taught in the Nurmohamed patent in a single chip embodiment or by any other embodiment for that matter would have been an obvious Engineering design choice based on system design requirements.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Nurmohamed by including use of a chip to house the voter circuit for channel redundant systems taught in the Nurmohamed patent. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of a chip to house the voter circuit for channel redundant systems taught in the Nurmohamed patent would have provided the opportunity to implement an obvious embodiment of the teachings in the Nurmohamed patent based on system design requirements.

35 U.S.C. 103(a) rejection of claim 3.

Nurmohamed substantially teaches the claimed invention described in claim 1 (as rejected above). In addition, Nurmohamed teaches a bypass terminal for separating a signal of the failed channel when interruption of the signal is required due to repair of the failed channel in the system board (the Abstract in Nurmohamed teaches that if channel 1 or channel 3 fails the output for that channel is switched to channel 2 or channel 1 respectively to maintain the operation of the system, hence respective failed channels 1 or 3 are bypassed); and trip terminal capable of forcibly changing the output value of said judging means to convert the operation (Note: col. 3, lines 20-33 in Nurmohamed teach that error signals indicating a channel failure are output on line 17 of Figure 1 and are used to forcibly control the output value of said judging means to convert the operation).

However Nurmohamed does not explicitly teach the specific use of a manual trip.

The Examiner asserts that Nurmohamed explicitly teaches a trip terminal capable of forcibly changing the output value of said judging means to convert the operation (Note: col. 3, lines 20-33 in Nurmohamed teach that error signals indicating a channel failure are output on line 17 of Figure 1 and are used to forcibly control the output value of said judging means to convert the operation). Use of a manual trip would be an obvious engineering design choice since Nurmohamed explicitly teaches lines 18 and 19 are outputted from the voter circuit for use in taking corrective actions (col.3, lines 30-33, Nurmohamed).



Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Nurmohamed by including use of a manual trip. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of a manual trip would have provided the opportunity to take corrective action using information provided from lines 18 and 19 outputted from the voter circuit (col.3, lines 30-33, Nurmohamed).

35 U.S.C. 103(a) rejection of claim 4.

Nurmohamed teaches said comparing means compares the input signals in the channels of the system board, and if a channel outputs a signal different from the other channels, outputs a signal informing that the channel outputting the different signal is failed (col. 2, lines 50-60 in Nurmohamed teach that three comparators in the monitoring circuit 16 in Figure 1 of Nurmohamed is a means for comparing the signals 1, 2 and 3 respectively received in a number of channels 10, 11 and 12 to output signals 1, 2 and 3 outputted from Amplifiers 13, 14 and 15 respectively informing if the channels are failed or not; Note: col. 3, lines 20-33 in Nurmohamed teach that error signals indicating a channel failure are output on line 17 of Figure 1; the Abstract in Nurmohamed teaches that if channel 1 or channel 3 fails the output for that channel is switched to channel 2 or channel 1 respectively to maintain the operation of the system).

35 U.S.C. 103(a) rejection of claims 5.

Nurmohamed teaches a logic circuit for transmitting an operation signal simultaneously with the signal outputted from the failed channel in the system board to normally maintain the operation of the system board upon receiving the failed channel informing signals (col. 2, lines 50-60 in Nurmohamed teach that three comparators in the monitoring circuit 16 in Figure 1 of Nurmohamed is a means for comparing the signals 1, 2 and 3 respectively received in a number of channels 10, 11 and 12 to output signals 1, 2 and 3 outputted from Amplifiers 13, 14 and 15 respectively informing if the channels are failed or not; Note: col. 3, lines 20-33 in Nurmohamed teach that error signals indicating a channel failure are output on line 17 of Figure 1; the Abstract in Nurmohamed teaches that if channel 1 or channel 3 fails the output for that channel is switched to channel 2 or channel 1 respectively to maintain the operation of the system).

35 U.S.C. 103(a) rejection of claims 6.

Nurmohamed substantially teaches the claimed invention described in claims 1 and 5 (as rejected above).

However Nurmohamed does not explicitly teach the specific use of an OR gate.

The Examiner asserts that an OR gate is one of the oldest known binary logic devices in the art and use of an OR gate to implement any circuit would be an obvious engineering design choice based on available materials, cost and circuit design.

Therefore, it would have been with the teachings of Nurmohamed by including use of an OR gate. This modification would have been obvious to one of ordinary skill in the art,

Art Unit: 2133

at the time the invention was made, because one of ordinary skill in the art would have recognized that use of an OR gate would have provided the opportunity to implement taught in the Nurmohamed patent based on available materials, cost and circuit design.

35 U.S.C. 103(a) rejection of claims 7.

Claim 7 substantially recites the method for using the circuit claimed in the Applicant's claim 1. The voter circuit for channel redundant systems taught in the Nurmohamed patent clearly suggests a method for use, hence see the rejection to claim 1.

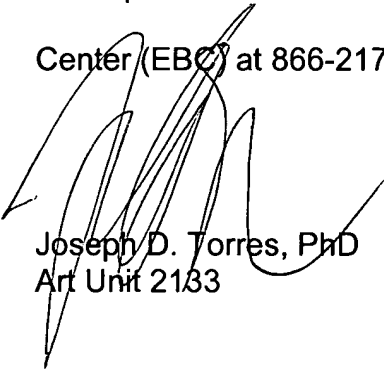
### ***Conclusion***

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (703) 308-7066. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (703) 305-9595. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2133

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Joseph D. Torres, PhD  
Art Unit 2133